DOCUMENT RESUME

ED 156 291 JC 780 388

AUTHOR Landry, Norman
TITLE The Effect of Prior Teaching Experience on Community College Grade Distributions.
PUB DATE Jul 78
NOTE 22p.; Ed.D. Practicum, Nova University

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS *College Faculty; Community Colleges; Faculty Mobility; *Grading; Institutional Research; *Junior Colleges; Secondary School Teachers; Teacher Behavior; Teacher Characteristics; *Teaching Experience; *Tenure
IDENTIFIERS Northern Essex Community College MA

ABSTRACT

The hypothesis of this study was that community college teachers with prior high school experience assigned grades which produced higher grade distributions than those of teachers with prior four-year college teaching experience. In addition, prior community college teaching experience and length of current teaching experience were considered as variables. The study sample consisted of 34 of the 121 member faculty at Northern Essex Community College (NECC); 13 had previously taught at four-year institutions and 21 at high schools. Findings indicated no significant relationship between four-year college or high school teaching and high or low grade distribution, nor between prior community college experience and length of NECC employment. However, there was a statistically significant relationship between length of NECC teaching experience and grade distribution for faculty members with mixed prior experience; there was a tendency to lower grade distribution with increasing NECC experience. A bibliography is appended. (Author/TR)

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THE EFFECT OF PRIOR TEACHING EXPERIENCE ON COMMUNITY COLLEGE GRADE DISTRIBUTIONS

by

Norman Landry

Northern Essex Community College
Haverhill, Massachusetts

JC 780 388

A Practicum Presented to Nova University in Partial Fulfillment of the Requirements for the Degree of Doctor of Education

NOVA UNIVERSITY

July, 1978

ABSTRACT

The purpose of this investigation was to determine the relationship between two types of prior teaching experience--four-year college level or secondary school level--and grade distributions of teachers at the community college level. A sample of 34 from a population of 121 faculty members at Northern Essex Community College (Haverhill, Massachusetts) was studied. No significant relationship was found.

Other related variables were considered and discussed (prior community college teaching experience and length of present (NECC) teaching experience). No significant relationship was determined. A statistically significant relationship was established between length of NECC teaching experience and grade distributions for faculty members with mixed prior experience.

Implications of the study for strategies to affect grade distributions, when indicated in a community college, were discussed and recommendations were made. Areas for further study, beyond the scope of this investigation, were listed.

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INTRODUCTION

Context of the Problem

It is known that the distribution of teacher-assigned grades differs from teacher-to-teacher. As early as 1961, some attention was paid to the monitoring of grade distributions by faculty members, by departments and by community college administrators (Dressel and others, 1961, 227), but little use was made of the information except in overt cases of substantial inconsistency with other distributions. Dating from Petersen (1972, 1) much has been written about the phenomenon of grade inflation, probably causing concern about a shift in grade distributions. Although not stated as intended to affect teacher attention to grade distribution, the following policy described in a press release (McKean, 1978, 12) will have that effect:

> In an effort to combat the effects of grade inflation (the average student's grade-point average rose from 2.44 in 1965 to 2.77 in 1974, according to a recent study), the University of Utah has begun computing class averages for all courses and adding them to students' transcripts.
>
> University officials believe the new practice will foster more realistic evaluations of academic performance by honors societies, graduate and professional schools, and prospective employers, as well as by students themselves.
>
> To maintain a reasonable level of statistical accuracy, class averages are computed only when 75 per cent or more of the grades for an individual class are available.

Little research has been done on the factors influencing grade distribution. There are several potential areas of influence: past experience with grading, either as a grader or as one being graded; present

experience; knowledge of the "state-of-the-art" of evaluation; and recent publicity concerning grade inflation. This study focused on the area of past grader experience as an influence.

Two types of prior teaching experience were examined so that a hypothesis concerning the relationship between these two types of prior experiences and grade distributions could be tested.

Statement of the Problem

The purpose of this study was to determine the relationship between two types of prior teaching experience--four-year college level or secondary school level--and the distribution of teacher-assigned grades at the community college level.

BACKGROUND AND SIGNIFICANCE

Review of the Literature

Faculty members teaching in many community colleges began their careers focusing, for the most part, on different functions in other types of educational institutions. Even recently, more than one-third of all beginning junior college instructors were recruited from elementary and secondary schools. They often perpetuate the same kind of educational practices which they had developed earlier in those different settings (Cohen, 1969, 97). Faculty members respond to the various demands of community college teaching by drawing extensively from and building upon experiences and orientations developed in the most-related preceding career experience of the recruit (Friedman, 1969, 103).

There has been a national trend of rising grade-point averages of undergraduates at all types of institutions, indicating a shift in grade distributions (Burwen, 1971; Juola, 1974, 5). This consistent pattern of grade inflation has also been documented by reports from individual colleges (Carney and others, 1978, 217). Community colleges have not been exempt. Reports were made documenting shifts in grade distributions at Broward Community College (Handleman, 1974) and Harford Community College (Tschechtelin, 1975). Similar shifts have been reported in other colleges (Daly, 1975; Wissler, 1975).

A variety of explanations has been advanced, including that higher grades have resulted from the use of student evaluations of faculty members as part of the evidence on which decisions about promotions and tenure are based (Nichols and Soper, 1972; Kennedy, 1975; Ostrowski, 1975; Snyder and Clair, 1976), and that faculty members have awarded higher grades to keep up enrollments in a period of hard times for higher education (Scully, 1975, 12).

A leveling-off of this trend may have been caused by the publicity. Jacobson (1976, 1) reports that Arvo Juola's latest analysis attributed a recent decline in grade-point average directly to a new concern in the colleges over grade inflation. About 80 percent of the 135 institutions studied have taken steps to review or curb inflation, with their actions ranging from simple discussion and study of the problem to specific administrative change. Twenty percent of the institutions said they were providing inflation data to their faculties or monitoring the grading practices of individuals. Another 20 percent said they were taking such steps as reducing the time students may take to drop courses without

penalty, adding restrictions to the use of pass-fail options, raising standards for awarding honors, and restoring grades of D or F where they had been dropped. The most prevalent change in grading practices was to add intermediate grades through the use of a plus or minus, or both, in combination with letter grades.

Student expectations may provide a similar effect. Female "best" students and those going to graduate school prefer an outstanding teacher to one who gives higher than average grades (Leonard, 1973, 12).

No literature was found dealing specifically with the relationship between prior teaching experience and grade distribution in the community college.

Significance of the Study

The evaluation of learning by teachers is probably one of the lowest ranked among their professional concerns, possibly because in general teachers have quite limited knowledge of measurement concepts (Farr and Griffin, 1973, 19).

Yet, in the field, more and more attention is being paid to competency-based instruction, criterion-referenced evaluation, and evaluation as integral to learning activity. Carney and others (1978, 228) have documented that the use of criterion-referenced evaluation appears to be related to higher grades. Their questionnaire data indicated that faculty members rated student mastery of specific course objectives as the number one criterion in determining students grades.

Many teachers may believe that their present methods of grading (usually based on their perception of the way in which they were graded) will be adequate to any new or innovative requirements which they may have

to meet. Few teachers regard the academic grade by itself as a satisfactory criterion of educational outcome, and how grades relate to success in the eyes of the student, his parents, and other interested individuals or groups, or to success of various sorts in later life, are matters about which very little is known (Sanford, 1962, 26). In fact, participation in the responsibility for measuring the amount and quality of what is being learned requires a substantial re-evaluation of grading practices by teachers.

In order to motivate teachers to re-evaluate grading practices, we need to understand the conditions under which the present grading practices were developed, in all their variety, by all teachers. Once understood, a change strategy may be developed which takes the conditions into consideration.

PROCEDURES

Statement of the Hypothesis

It is expected that community college teachers with prior high school teaching experience (the High Schoolers) assigned grades which produce grade distributions "higher" than the grade distributions of teachers with prior four-year college teaching experience (the Profs).

Rationale for the Hypothesis

One determinant of grading practices is past experience at grading. The Profs would have experienced four-year college teaching and evaluating strategies, and might have high expectations for their community college students, sometimes reflected in poorer grades. Until such time as these

expectations are modified by experience with community college students, their grade distributions would tend to be lower.

The High Schoolers have usually been in contact with students who have a greater range of abilities and have probably experienced peer emphasis on the logistics of motivating students to learn, often by skillful devices (Friedman, 1969, 105). The carry-over of this experience, which would tend to cause realistic expectations of community college students, could reflect itself in better grades and "higher" grade distributions.

Operational Definitions of the Variables

The independent variable of this study has two levels:

(1) prior college teaching experience is one or more academic years of full-time teaching experience in the four-year college, claimed by the teacher on the personnel information form, prior to the beginning of the present community college teaching experience.

(2) prior high school teaching experience is one or more academic years of full-time teaching experience in the secondary school (grades 9 to 12), claimed by the teacher on the personnel information form, prior to the beginning of the present community college teaching experiences.

The dependent variable of this study, grade distribution, is the distribution of frequency of the letter grades A, B, C, D, F, INC, W, WF and NC assigned for each section, course or combination of courses by a teacher. The method of measuring the frequency distribution for each faculty member is described in the section Dependent Variable.

Subjects

Ss were chosen from among 121 full-time faculty members at Northern Essex Community College (Haverhill, Massachusetts). The number of Ss was determined by the number of those who met the criterion of one of the two levels of the operational definition for the independent variable.

Those who met neither or both conditions of the operational definition were eliminated from the study.

Ss taught in all areas of this comprehensive community college and the length of their teaching experience at Northern Essex Community College varied from one to fourteen years.

Independent Variable

This measured independent variable has two levels. Ss were classified either as "Profs" or "High Schoolers" depending on whether they had prior 4-year college teaching experience or prior high school teaching experience. Those who have both kinds of experience or neither were eliminated from the investigation.

Information concerning prior experience was derived from the application for employment and verified by examination of a current personnel information form.

Dependent Variable

This measured dependent variable has two levels. Data was gathered in the form of all grades assigned for one semester (Fall 1976) by each full-time faculty member. Each letter grade was assigned a score as follows: A = 4, B = 3, C = 2, D = 1, and F = 0. Other possible grade designations (Incomplete, Withdrawn, Withdrawn Failing, and No Credit) were also assigned a score of 0 to account for the differential effect of

these grades on faculty mean scores. Grade designations of Pass and Withdrawn Passing were ignored. The sum of all scores was divided by the number of scores to determine a mean score for each full-time faculty member. Mean scores grouped at or above the median of the distribution of the mean scores of all full-time faculty members were categorized as "higher grade distribution", those below as "lower grade distribution."

Data Analysis

Since both the independent variable and the dependent variable are nominal, the nonparametric technique of the Chi-square test was used to analyze the relationship between the variables. It was determined that since the sample was small, the Kilmogorov-Smirnov test or the Fisher Exact test (Siegel, 1956, 111-112 and 96-104) would also be used, if the Chi-square test showed a significant difference in the proportion of teachers from either "Prof" or "High School" backgrounds who grade "higher" or "lower." The former test has the additional advantage of treating individual observations separately (Siegel, 1956, 47-52).

The 5% ($p < .05$) level was considered an acceptable level of confidence at which to reject the null hypotheses.

RESULTS

Subjects and the Independent Variable

Subjects were chosen from among 121 faculty members teaching at Northern Essex Community College (Haverhill, Massachusetts) during the Fall 1976 semester. Thirteen (10.7%) were classified as Profs, and twenty-one (17.4%)

were classified as High Schoolers. Thirty-four subjects were in the sample (28% of the population).

The Dependent Variable

One hundred and twenty-one mean scores were computed. The median of the distribution of mean scores for all faculty was 2.17 . Subjects with mean scores greater than or equal to 2.17 were categorized as Higher Grade Distribution (HGD), and those with mean scores of less than 2.17 were categorized as Lower Grade Distribution (LGD). Fourteen subjects (41% of the sample) were HGD, and twenty (59%) were LGD.

The effect of ignoring grade designations of Pass and Withdrawn Passing was negligible, since the grade of Pass was not assigned and there was one instance of the assignment of Withdrawn Passing.

Data Analysis

The Chi-square test was applied given the contingency table:

	Higher GD	Lower GD
Profs	6	7
High Schoolers	8	13

The computation of Chi-square was done using a formula involving a correction for continuity (Siegel, 1956, 107) since N was less than 100. Chi-square was computed as 0.0111 . A value of 3.84 was required to attain significance at the .05 level for one degree of freedom. The null hypothesis of no relationship was accepted.

DISCUSSION AND RECOMMENDATIONS

The results of this investigation showed that there was no relationship between prior teaching experience--four-year college level or high school level--and grade distributions--higher or lower--at Northern Essex Community College (NECC). The observed differences in the sample data were not statistically significant and may be attributed to chance.

Another Independent Variable

In addition, fifteen (12.4%) faculty members were found to have had exclusively community college prior experience. A Chi-square test was performed on the 3 x 2 contigency table:

	Higher GD	Lower GD
Profs	6	6
High Schoolers	8	13
Community College	7	8

Chi-square was computed as 0.33 , but since a value of 5.99 was required to attain significance at the .05 level for two degrees of freedom, no statistically significant relationship was found.

Experience at Northern Essex Community College

A possible moderator or intervening variable was considered; that is, the number of years of teaching experience at Northern Essex Community College. The relationship between the number of years of teaching experience at NECC and Higher or Lower Grade Distribution was studied for the Profs, the High-Schoolers and those with prior community college experience.

A Chi-square test was performed on the 3 x 2 contingency table:

NECC experience (years)	Grade Distribution	
	Higher	Lower
1-5	8	7
6-10	8	13
11 or more	5	8

Chi-square was computed as 0.96 , but since a value of 5.99 was required to attain significance at the .05 level for two degrees of freedom, no statistically significant relationship was found.

A similar Chi-square test was performed for all 121 faculty members to determine the relationship of NECC teaching experience to grade distribution without regard to prior teaching experience. The 3 x 2 contingency table was as follows:

NECC experience (years)	Grade Distribution	
	Higher	Lower
1-5	30	26
6-10	23	23
11 or more	7	12

Chi-square was computed as 1.59 , but since a value of 5.99 was required to attain significance at the .05 level for two degrees of freedom, no statistically significant relationship was found. Apparently, the number of years of present community college teaching experience is unrelated to level of grade distribution.

Although no statistically significant relationship was determined for the relationship between NECC experience and grade distribution for all 121 faculty members, the percentage crossbreak for the same contingency table

NECC experience (years)	Grade Distribution	
	Higher	Lower
1-5	54	46
6-10	50	50
11 or more	37	63

showed a tendency to lower grade distributions with increasing NECC experience. Consequently, the investigator examined the relationship between NECC experience and grade distribution for the two remaining categories of prior experience; that is, no prior experience and mixed prior experience (any combination of four-year college, secondary school or community college experience).

Chi-square for the no prior experience group was 3.60 , where a value of 5.99 was required for .05 level significance for two degrees of freedom. Chi-square for the mixed prior experience group was 9.11 , indicating significance at the .02 level (7.82 required) for two degrees of freedom. The percentage crossbreak was as follows:

NECC experience (years)	Grade Distribution	
	Higher	Lower
1-5	80	20
6-10	100	0
11 or more	0	100

Implications of the Study

This study clearly indicated that at Northern Essex Community College prior teaching experience, whether at the four-year college, secondary school or community college level, was not related to level of grade distribution. If hiring criteria similar to those used in the past are continued, for those applicants in these three categories of prior experience, it can be expected that these new faculty will have grade distributions similar to those now existing. Further, the number of years of teaching experience at NECC does not appear to be related to level of grade distribution. The creation of a strategy to modify grade distribution need not take into account prior teaching experience or amount of experience at NECC for those teachers with prior four-year college, secondary school or community college experience.

Similar comments apply to candidates with no prior experience, although ad hoc analysis indicates that except for the last five years, faculty members with no prior experience appear to demonstrate a tendency to have higher than average grade distributions. The percentage cross-break

NECC experience (years)	Grade Distribution	
	Higher	Lower
1-5	27	73
6-10	53	47
11 or more	67	33

illustrates this tendency (It must be noted that Chi-square was 3.60 , statistically significant at the .20 level only (3.22 required) for two

degrees of freedom). Further longitudinal study may show that NECC experience affects the grade distributions of faculty members with no prior experience.

Faculty members with mixed prior experience (most commonly four-year college and secondary school at NECC) hired during the last ten years have higher grade distributions to a statistically significant degree as shown in the Results section. If academic administrators wished to modify the characteristics of NECC grade distributions, it is likely that attention to mixed prior teaching experience as a qualification for new faculty would tend to increase the overall levels of grade distributions, although given present economic conditions (small number of new positions compared to total faculty), this approach would be relatively slow and ineffective. It remains unexplained why those faculty members with eleven or more years of NECC experience and of mixed prior experience all had lower grade distributions. There were a relatively small number and insufficient information was available to speculate on possible common causative factors.

When modification of grade distributions is indicated at a community college, this investigator recommends certain administrative actions that would have the desired effects. Examples are given in the section Review of the Literature. In addition, to get to the real issues of the improved evaluation of learning, professional development efforts should be directed to the consideration of measurement concepts and the principles inherent to competency-based instruction.

Further Research

Further research is indicated to determine the possible effects of the following variables on teacher grade distribution: 1) past experience

as one being graded in either pre-service or inservice study on the part of teachers, 2) knowledge of the state-of-the-art of evaluation as a function of academic background or in the formal study of measurement principles, 3) administrative actions, possible in response to publicity concerning grade inflation, and 4) subject matter taught by the faculty member assigning the grade.

With regard to the latter variable, an investigation in process (Pailes) appears to have demonstrated that significant differences in mean grades assigned exist among disciplines at Northern Essex Community College. The grading period under study is Fall 1975, and mean scores are computed for grades A, B, C, D and F. Grade designations of Incomplete, Withdrawn, Withdrawn Failing, No Credit, Pass, and Withdrawn Passing are not considered.

Data for this study were collected as of the Fall of 1976. In 1975, the Commonwealth of Massachusetts experienced a fiscal crisis which affected the operation of public higher education institutions in the state, particularly the community college system. Faculty members became concered about job security, especially as administrators focused on full-time-equivalent student counts, student/faculty ratios, attrition, and job placement of graduates as measures of accountability. At the same time, the Massachusetts community college system was negotiating its first collective bargaining agreement, and emphasis was being placed on increasing the ratio of career program students to liberal arts students. It is not well understood what effects these phenomena may have had on grade distributions, but one may speculate that the grading practices of faculty members were affected in various ways. A longitudinal

study of grade distributions dating from 1972 is required to test the relationship to these variables.

This same logitudinal study should provide academic administrators with information to examine NECC's grade distributions for evidence of grade inflation. It would be useful to consider modeling similar grade inflation studies (for example, Juola or Tschechtelin) for comparison purposes. The investigator should be aware that there may be a levelling-off of any grade inflation trend, as documented by Juola in 1976 (Jacobson, 1976, 1).

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